

Non-Surgical Resolution of High-Grade Hamstring Tears Following Autologous Platelet-Rich Plasma Injections with Serial MRIs

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Introduction

Hamstring tendon tears are common in sports that require sprinting, jumping, or quick acceleration/deceleration, most often occurring at the myotendinous junction. Conservative management is the mainstay of treatment, with RICE (rest, ice, compression, elevation) and gradual rehabilitation historically comprising most treatment protocols (1). Some studies suggest autologous platelet rich plasma (PRP) injections have proven efficacious in hastening recovery in many soft tissue injuries (2).

Patients

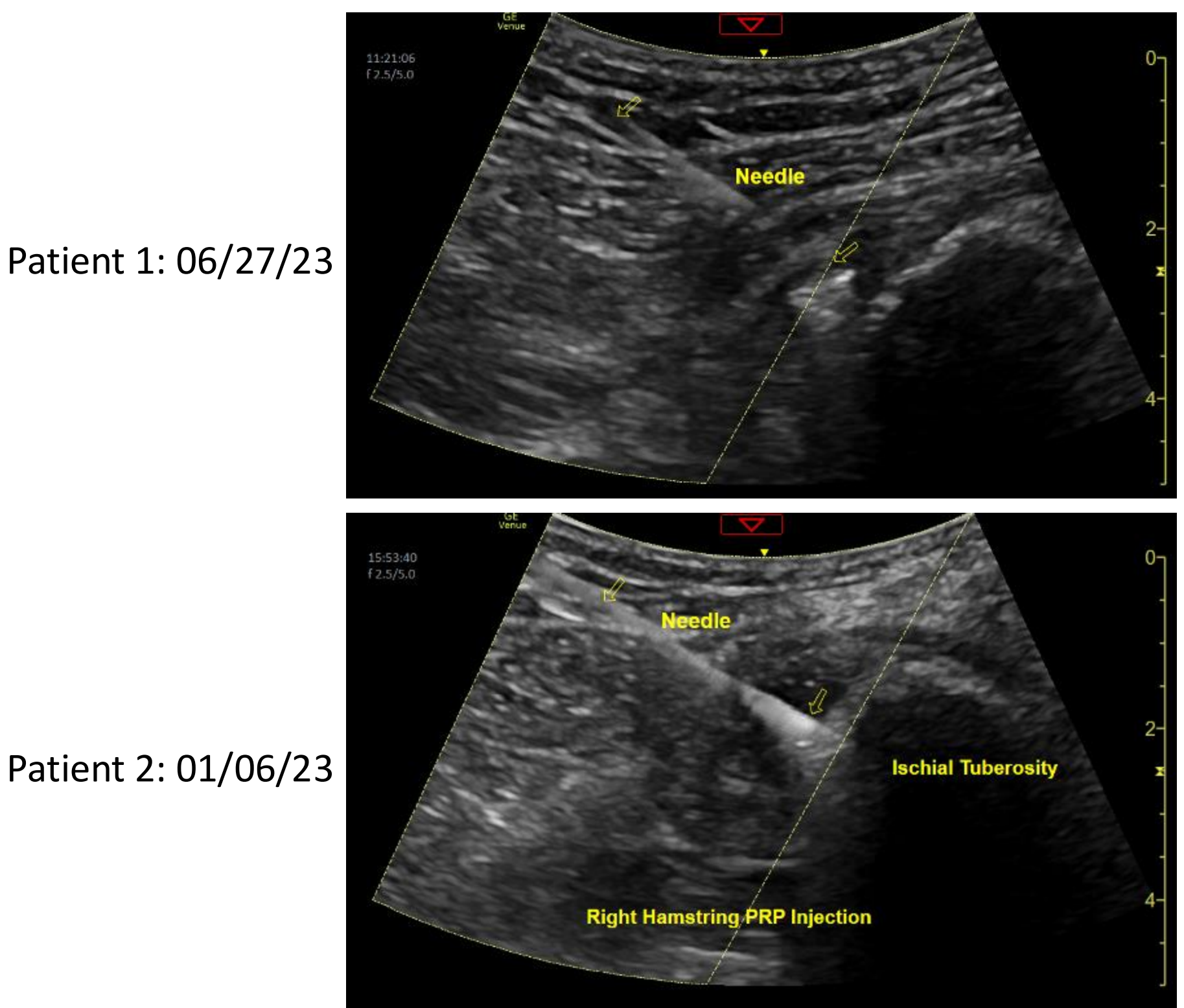
- Patient 1**

 - 60y Male
 - Complete R conjoint hamstring tendon tear 02/22 while snowboarding (dx 06/22)
 - 3 rounds of autologous PRP 07/22, 01/23, 06/23
 - Pain free and running 5mi by 08/22
 - Reported back to snowboarding at 05/23 appointment
 - Near complete resolution of hamstring tear 12/23
- Patient 2**

 - 47y Female
 - >50% R conjoint and semimembranosus tendon tear 11/21 while running a marathon (dx 10/22)
 - 3x USGI (2x sciatic, 1x ischiogluteal bursa)
 - 2 rounds of autologous PRP 10/22, 01/23
 - Pain free by follow up 02/23, competed in marathon 04/23
 - Substantial interval healing of R hamstring tendon with only mild residual tendinopathy and scarring 11/23

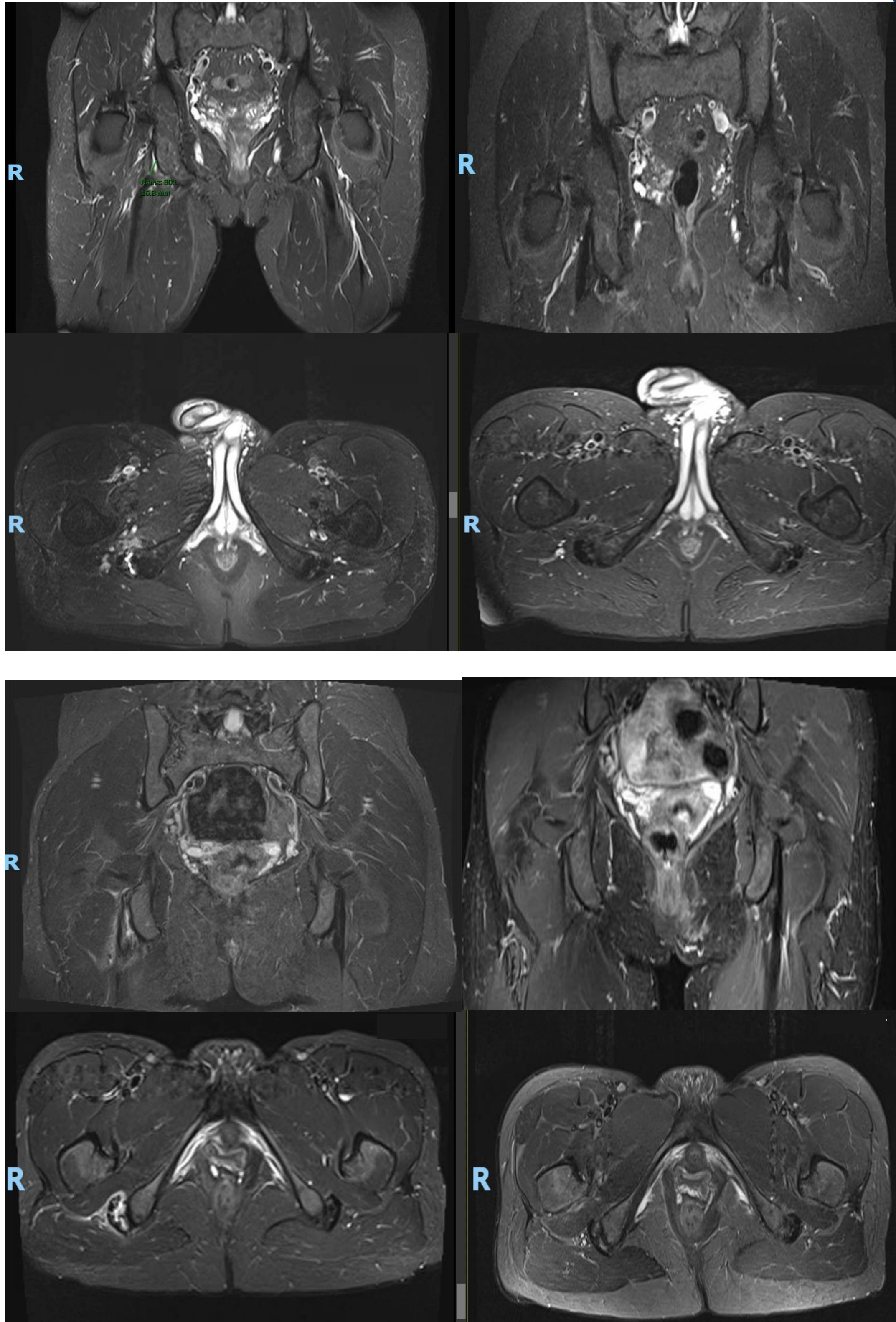
Methods/Results

	Patient 1		Patient 2
PRP Injection #1	7/25/22		10/19/22
Volume blood	15cc		15cc
Centrifuge time	5 minutes		5 minutes
PRP prepared	5cc		5cc
Needle	3.5in, 22gauge		3.5in, 22gauge
Approach	Lateral to Medial		Lateral to Medial
Probe	Short axis to hamstring tendon		Short axis to hamstring tendon
PRP Injection #2	1/31/22		1/6/23
Volume blood	15cc		15cc
Centrifuge time	5 minutes		5 minutes
PRP prepared	5cc		5cc
Needle	3.5in, 22gauge		3.5in, 22gauge
Approach	Lateral to Medial		Lateral to Medial
Probe	Short axis to hamstring tendon		Short axis to hamstring tendon
PRP Injection #3	6/27/23		
Volume blood	15cc		
Centrifuge time	5 minutes		
PRP prepared	5cc		
Needle	3.5in, 22gauge		
Approach	Lateral to Medial		
Probe	Short axis to hamstring tendon		



Before

After



Discussion

Though the literature is not in consensus, many prior studies suggest autologous PRP injections have proven efficacious in the treatment of hamstring tears in decreasing mean time until return-to-play and pain severity scores (2). While studies evaluating these measures specifically in MRI-confirmed hamstring tears treated with PRP are present (3), this case report adds to a relatively limited pool of literature demonstrating MRI-confirmed resolution of hamstring tears following autologous PRP injections. PRP injections, in conjunction with PT and pain control with oral agents, may prove more efficacious as an adjunct treatment modality in acute hamstring tear, though further prospective research is necessary to evaluate this claim.

Literature Cited

1. Ali, Kashif, and J. Martin Leland. "Hamstring strains and tears in the athlete." Clinics in sports medicine 31.2 (2012): 263-272.
2. La Fleur P, Argáez C. "Platelet-Rich Plasma Injections for Wound Healing and Tissue Rejuvenation: A Review of Clinical Effectiveness, Cost-Effectiveness and Guidelines" [Internet]. Ottawa (ON): Canadian Agency for Drugs and Technologies in Health (2017).
3. Reurink, Gustaaf, et al. "Magnetic resonance imaging in acute hamstring injury: can we provide a return to play prognosis?." Sports medicine 45 (2015): 133-146.